

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. E-100, SUB 179

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of:

Duke Energy Progress, LLC, and)	DIRECT TESTIMONY OF
Duke Energy Carolinas, LLC, 2022 Biennial)	BRADFORD D. MULLER FOR
Integrated Resource Plans and Carbon Plan)	CIGFUR II & III

1 **Q: MR. MULLER, PLEASE STATE YOUR NAME, BUSINESS ADDRESS,**
2 **AND POSITION.**

3 A: My name is Bradford D. Muller, and my business address is 2109 Randolph Road,
4 Charlotte, North Carolina 28207. I currently serve as the Vice President of
5 Corporate Communications, Marketing, and Government Affairs for Charlotte Pipe
6 and Foundry Company.

7 **Q: PLEASE BRIEFLY SUMMARIZE YOUR EDUCATIONAL**
8 **BACKGROUND AND PROFESSIONAL QUALIFICATIONS.**

9 A: I have a Bachelor of Arts degree from Kenyon College. I have worked for Charlotte
10 Pipe and Foundry Company (“Charlotte Pipe”) for 20 years. During my tenure with
11 Charlotte Pipe, I have gained direct first-hand knowledge and experience with
12 many facets of Charlotte Pipe’s business operations, including its manufacturing
13 processes and energy procurement, usage, and load. My professional biography can
14 be found at Appendix A to this testimony.

15 **Q: PLEASE TELL US WHO IS SPONSORING YOUR TESTIMONY IN THIS**
16 **PROCEEDING.**

17 A: I am providing this testimony on behalf of the Carolina Industrial Group for Fair
18 Utility Rates II & III (together, “CIGFUR”). Charlotte Pipe is an industrial
19 customer of Duke Energy Carolinas, LLC, currently taking service under DEC’s
20 Optional Power Time of Use, Voltage Differential, Secondary Large (“OPT-V”) rate
21 schedule. Charlotte Pipe is one of CIGFUR III’s member companies.

22

1 **Q: CAN YOU PLEASE TELL US MORE ABOUT CHARLOTTE PIPE AND**
2 **FOUNDRY COMPANY AS A BUSINESS?**

3 A: Charlotte Pipe is a fifth-generation, family-owned manufacturer based in
4 North Carolina. Founded in 1901, Charlotte Pipe is the leading producer of cast
5 iron and plastic pipe and fittings for plumbing systems. As its name suggests,
6 Charlotte Pipe is headquartered in Charlotte, North Carolina. Charlotte Pipe has
7 seven plant locations across the United States. Our company recently acquired a
8 wholly owned subsidiary, Neenah Enterprises, Inc., which operates three additional
9 domestic cast iron foundries. Charlotte Pipe employs approximately 1,400 people
10 at its facilities in North Carolina and approximately 2,700 people at its facilities
11 across the country, including those in North Carolina.

12 In Monroe, North Carolina, Charlotte Pipe operates a plastic extrusion and
13 injection molding manufacturing plant with a demand of 17 MW. In addition,
14 Charlotte Pipe is in the process of replacing a cast iron foundry in uptown Charlotte
15 with a demand of 58 MW with a \$460 million state-of-the-art greenfield foundry in
16 Oakboro, NC. The new 45-acre facility in Oakboro will have a 70-MW demand
17 and will have converted from using a fossil fuel melt process in the old foundry to
18 a cleaner, more energy-efficient electric melt technology in the new plant.

19 **Q: CAN YOU PLEASE TELL US WHAT, IF ANY, CONCERNS YOU HAVE**
20 **REGARDING DUKE ENERGY'S PROPOSED CARBON PLAN?**

21 A: This response corresponds to Ordering Paragraphs 1.i.i. and 1.i.v. of the
22 Commission's July 29, 2022 Order Scheduling Expert Witness Hearing, Requiring
23 Filing of Testimony, and Establishing Discovery Guidelines ("Order").

1 As a company whose products require energy-intensive manufacturing
2 processes, Charlotte Pipe is very concerned that the total costs and bill impacts to
3 ratepayers have been significantly understated in Duke’s proposed Carbon Plan.
4 This is particularly problematic because the estimated rate impacts,
5 albeit understated, will still push industry to the brink (or beyond) of rate increases
6 it is able to absorb before manufacturers are forced to make difficult decisions,
7 including potentially shifting load (and corresponding jobs) out of state where
8 electric rates are more competitive.

9 More specifically, I believe Duke’s proposed Carbon Plan fails to provide
10 an “all-in” total cost and rate impact estimate encompassing all projected capital
11 spending planned in the coming years, both related and unrelated to the Carbon
12 Plan. This is concerning because it means the Commission is being asked to
13 decide—without the benefit of complete and accurate cost and rate impact
14 information—issues such as whether Duke’s proposed Carbon Plan complies with
15 least-cost principles and whether Duke’s proposed Carbon Plan constitutes the
16 “reasonable steps” to carbon emissions reductions contemplated by House Bill 951.
17 In addition, while I believe the cost and rate impacts provided are understated, the
18 estimates provided by Duke are still—even though understated—significantly large
19 enough to have a detrimental impact on the North Carolina economy.

1 **Q. CAN YOU ELABORATE ON WHAT YOU MEAN BY DUKE’S CARBON**
 2 **PLAN FAILS TO PROVIDE AN “ALL-IN” TOTAL COST AND IMPACTS**
 3 **TO RATEPAYERS FOR ALL PLANNED SPENDING BOTH RELATED**
 4 **AND UNRELATED TO THE CARBON PLAN?**

5 **A:** This response corresponds to Ordering Paragraphs 1.a., 1.b., 1.e., 1.f., 1.g., 1.i.i.,
 6 and 1.i.v. of the Commission’s Order.

7 First, the scenarios Duke has provided with their multi-portfolio proposal
 8 are going to be costly no matter what. Again, my testimony emphasizes that this is
 9 likely an understatement, but Public Staff’s Exhibit 2 – DEC Cumulative and
 10 Annual Average Bill Impacts for Industrial Customers – reflects Duke’s estimated
 11 impact and average annual impact to monthly industrial bills for an average DEC
 12 industrial customer using 32,500,000 kWh with a corresponding demand of
 13 50 MW.

TOTAL IMPACT TO MONTHLY INDUSTRIAL BILLS				
Industrial - 32,500,000 KWh / 50,000 KW				
	2023- 2030 Impact to Industrial Bills		2023 - 2035 Impact to Industrial Bills	
	% Increase	\$ Increase	% Increase	\$ Increase
DEC - COS - (P1)	7.5%	\$123,507	30.8%	\$507,228
DEC - COS - (P2)	4.9%	\$80,009	27.6%	\$454,268
DEC -COS - (P3)	6.1%	\$100,751	26.9%	\$443,057
DEC - COS - (P4)	4.8%	\$79,208	25.8%	\$425,275
AVERAGE ANNUAL IMPACT TO MONTHLY INDUSTRIAL BILLS				
Industrial - 32,500,000 KWh / 50,000 KW				
	2023- 2030 Impact to Industrial Bills		2023 - 2035 Impact to Industrial Bills	
	% Increase	\$ Increase	% Increase	\$ Increase
DEC - COS - (P1)	1.0%	\$17,643.88	2.3%	\$42,269.02
DEC - COS - (P2)	0.7%	\$11,429.83	2.0%	\$37,855.69
DEC -COS - (P3)	0.9%	\$14,392.93	2.0%	\$36,921.44
DEC - COS - (P4)	0.7%	\$11,315.37	1.9%	\$35,439.58

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 15 These impacts—again, understated though they very likely are—will be even more
 16 significant for DEP’s industrial customers. And the alternative portfolios proposed
 17 by Duke would result in approximately double the total bill impact for each
 18 alternative portfolio for both DEP and DEC’s industrial customers.

TOTAL IMPACT TO MONTHLY INDUSTRIAL BILLS				
Industrial - 32,500,000 KWh / 50,000 KW				
	2023- 2030 Impact to Industrial Bills		2023 - 2035 Impact to Industrial Bills	
	% Increase	\$ Increase	% Increase	\$ Increase
DEP - COS - (P1)	30.1%	\$631,878	38.6%	\$807,826
DEP - COS - (P2)	24.6%	\$517,343	38.5%	\$804,933
DEP - COS - (P3)	15.7%	\$333,761	26.2%	\$551,442
DEP - COS - (P4)	14.8%	\$314,976	29.0%	\$609,823
AVERAGE ANNUAL IMPACT TO MONTHLY INDUSTRIAL BILLS				
Industrial - 32,500,000 KWh / 50,000 KW				
	2023- 2030 Impact to Industrial Bills		2023 - 2035 Impact to Industrial Bills	
	% Increase	\$ Increase	% Increase	\$ Increase
DEP - COS - (P1)	3.9%	\$90,268.35	2.8%	\$67,318.86
DEP - COS - (P2)	3.2%	\$73,906.18	2.8%	\$67,077.76
DEP - COS - (P3)	2.2%	\$47,680.15	2.0%	\$45,953.48
DEP - COS - (P4)	2.0%	\$44,996.54	2.2%	\$50,818.56

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Second, these projected cost and rate impacts are understated, in part, because they do not reflect certain costs that Duke contends are either unrelated to the Carbon Plan or will be common to all proposed portfolios. For example, Duke did not include costs or rate impacts associated with Grid Improvement Plan (“GIP”) investments. But GIP costs are still cost drivers that affect the total cumulative rate impact. Without the critically important context of total cumulative rate impact for all new capital spending, it is impossible to evaluate whether the Carbon Plan as proposed is least-cost or whether it constitutes “reasonable steps” towards the energy transition. In addition, Duke makes it clear that for all portfolios, the 2050 long-term strategy for new and existing natural gas plants is to retrofit them so that they can accommodate hydrogen as a fuel source. However, Duke did not include cost assumptions for these hydrogen-enabling infrastructure upgrades into its Carbon Plan total cost projections or bill impact estimates. In addition, Duke did not include other costs common to all portfolios, like storm securitization and the Red Zone Transmission Expansion Plan transmission and distribution upgrades to accommodate additional renewable generation. Finally, while we support Duke’s pursuit of subsequent license renewals (“SLRs”) for its nuclear fleet, Duke did not

1 include the projected costs for obtaining these SLRs. These costs need to be
2 reflected in Duke’s Carbon Plan cost estimates and projected rate impacts because
3 they are an incremental cost to the present value of revenue requirement (“PVRR”)
4 of each Carbon Plan portfolio. These are just a few examples of cost drivers that
5 were largely or entirely omitted from cost and rate impact estimates in Duke’s
6 proposed Carbon Plan.

7 Third, we note that Duke did not provide estimates for the potential
8 additional costs to its North Carolina customers in the event that the Public Service
9 Commission of South Carolina (“PSCSC”) rejects the Carbon Plan or otherwise
10 disallows cost recovery of costs to comply with House Bill 951. While CIGFUR
11 contends Duke’s North Carolina customers should be held harmless for the South
12 Carolina jurisdictional allocable portion of Carbon Plan implementation and
13 compliance costs, CIGFUR also believes that some modification of the
14 Carbon Plan—at least in the near-term until 2024, when the next Carbon Plan
15 biennial review will occur—is warranted as a hedge against the substantial
16 regulatory risk of the PSCSC’s rejection of the Carbon Plan. I believe this is
17 necessary to protect Duke’s North Carolina customers from the possibility that
18 Duke seeks future cost recovery from its North Carolina customers for the
19 South Carolina jurisdictional allocable portion of such costs.

20 I believe the Commission and the general public need to be provided with
21 revised Carbon Plan cost estimates and rate impacts that paint a more
22 all-encompassing and accurate picture of what the “all-in” cost and bill impact
23 forecasts expected to be shouldered by North Carolina ratepayers through 2035 will
24 be, for spending both related and unrelated to the Carbon Plan. Without this

1 critically important information, how can the Commission be expected to decide
2 whether Duke’s proposed Carbon Plan complies with the requirements of HB 951
3 that it be both least-cost and constitutes “reasonable steps” towards compliance
4 with the carbon dioxide emissions reduction goals set forth in that legislation?

5 Finally, I believe Duke needs to affirmatively assure this Commission and
6 its ratepayers of its intent to securitize—for the benefit of ratepayers—50% of the
7 costs associated with the early, uneconomic retirement of its still serviceable coal
8 fleet, which will come at a substantial cost to ratepayers and is another cost driver
9 that Duke did not sufficiently quantify or otherwise account for in its cost estimates
10 and projected rate impacts in its proposed Carbon Plan.

11 **Q: CAN YOU ELABORATE ON THE POSITION THAT DUKE’S**
12 **NORTH CAROLINA RATEPAYERS SHOULD BE HELD HARMLESS**
13 **FOR SOUTH CAROLINA’S JURISDICTIONAL ALLOCABLE SHARE OF**
14 **HB 951 COMPLIANCE COSTS IN THE EVENT SOUTH CAROLINA**
15 **REJECTS DUKE’S CARBON PLAN?**

16 A: This response corresponds to Ordering Paragraphs 1.a., 1.g., 1.i.i., and 1.i.v. of the
17 Commission’s Order.

18 Duke failed to model how the Carbon Plan portfolios should potentially be
19 adjusted—and how the resulting rate impacts to its North Carolina customers would
20 be affected—in the event that the PSCSC rejects Duke’s proposed Carbon Plan next
21 year when Duke seeks regulatory approval through its South Carolina IRP docket.
22 Should South Carolina reject Duke’s Carbon Plan, will the utility attempt to
23 unfairly layer even more costs on North Carolina ratepayers? I believe this would
24 be an unreasonable and unjust course of action that would run afoul of the

1 Legislature’s understanding that Carbon Plan implementation costs would be
2 spread across Duke’s dual-state footprint in the Carolinas, not shouldered
3 exclusively by North Carolina ratepayers. Most concerning, this issue remains
4 unaddressed. Duke has touted its proposed Carbon Plan as the “Carolinas Carbon
5 Plan.” If it is potentially going to instead be the North Carolina—emphasis on the
6 singular “Carolina”—Carbon Plan, then Duke’s portfolios should be scaled back
7 and adjusted as appropriate. In no universe is it appropriate or acceptable for
8 North Carolina ratepayers to foot any portion of the bill for South Carolina’s
9 jurisdictional allocable share of Carbon Plan implementation costs.

10 **Q: CAN YOU SPEAK TO THE IMPORTANCE OF RELIABILITY AND**
11 **POWER QUALITY TO CIGFUR MEMBER COMPANIES GENERALLY**
12 **AND TO CHARLOTTE PIPE SPECIFICALLY, AS ONE OF DEC’S**
13 **LARGE INDUSTRIAL CUSTOMERS?**

14 A: This response corresponds to Ordering Paragraphs 1.a. and 1.j. of the
15 Commission’s Order.

16 Duke should be applauded for presently being a low-cost, high-quality
17 electricity supplier. Charlotte Pipe operates seven plants around the United States.
18 Duke Energy currently offers the most reliable, highest quality and least cost
19 electricity compared with our suppliers in other states where we operate. But we
20 worry this has the potential to change for the worse as the Carbon Plan is
21 implemented.

22 As an energy-intensive manufacturer, power interruptions—even
23 momentary flickers—can take an enormous and costly toll on our manufacturing
24 equipment, processes, and production output. A power quality event is typically

1 measured by the percent of the nominal voltage in conjunction with the duration of
2 the event, which is measured in milliseconds. The deeper the sag, the less time it
3 takes to negatively impact the equipment. A shallower sag can negatively impact
4 operations given a long enough duration.

5 Charlotte Pipe's plastic extrusion systems are the most sensitive to power
6 quality incidents. A simple voltage sag (voltage drop from nominal) can disrupt the
7 extrusion line operation, shut machines down or otherwise damage equipment, or
8 cause electrical fires, among other consequences. Typically, sags wherein the
9 voltage is 70% of nominal and greater than 30 milliseconds (less than two cycles)
10 in duration will negatively impact a significant number of extrusion lines. Any total
11 loss of power regardless of duration will take out the entire plant. For these reasons,
12 any disruption or interruption in electric service to the extrusion lines, however
13 brief, poses a safety risk to our employees, disrupts our operations, decreases our
14 production output, and increases our costs.

15 For example, after our most recent power failure at our Monroe, NC facility,
16 which was caused by a weather event, it took two days to get one plant back online
17 due to burnt dies on the extrusion lines and four days to get a second plant up and
18 running due to that plant being single-phase. The single-phase event caused
19 multiple drive and motor failures, along with almost all our dies needing to be
20 cleaned and refurbished. Attached to this testimony as Exhibit 1 are photos showing
21 partially burnt dies. Attached to this testimony as Exhibit 2 is a photo showing the
22 amount of scrap product resulting from a power failure incident at one of our plants
23 in Texas.

1 As an energy-intensive industrial user, we are not unique in our need for
2 high-quality, reliable power. Indeed, this is a high priority for all CIGFUR member
3 companies. Though we appreciate Duke’s commitment to NERC standards for
4 reliability, it is concerning to hear how “high penetration of wind and solar have
5 exposed energy shortfalls for both brief and prolonged periods of time due to
6 significant weather-related output fluctuations.”¹ The challenges of managing a
7 complex system as large as Duke’s with increasing amounts of increasingly
8 variable resources being added to the system underscore how important
9 maintaining or improving—as required by HB 951—system reliability, including
10 power quality, will continue to be in the future as the Carbon Plan is implemented
11 over time.

12 For these reasons, I believe Duke should have explicitly analyzed power
13 quality as a distinct metric under the reliability umbrella in its proposed
14 Carbon Plan. Even though power quality may very well be analyzed locally,² Duke
15 should at least be required in future iterations of the Carbon Plan to consider and
16 analyze granular circuit-specific data in the aggregate regarding power quality
17 incidents. CIGFUR believes that just like the baseline and accounting methodology
18 for quantifying compliance with the carbon emissions reduction goals set forth in
19 HB 951, so too should there be specific reliability and power quality metrics—
20 beyond just SAIDI and SAIFI—for ensuring compliance with those corresponding
21 requirements set out in HB 951. For example, Duke should be required to also track
22 MAIFI (Momentary Average Interruption Frequency Index) = Total # of

¹ Direct Testimony of Duke Witnesses Roberts and Holeman, at 26.

² *See id.* at 83.

1 momentary customer interruptions per year / total number of customers. Beyond
2 MAIFI, Duke could also track aggregated data pertaining to conditions like changes
3 in voltage, including transient change, sags, surges, undervoltage conditions,
4 harmonic distortions, noise, stability, flickers, and frequency deviations.

5 **Q: SHOULD THE COMMISSION LOOK TO OTHER STATES AND**
6 **CONSIDER HOW DECARBONIZATION EFFORTS ARE BEING**
7 **IMPLEMENTED ELSEWHERE AS IT DEVELOPS THE INITIAL**
8 **CARBON PLAN?**

9 A: This response corresponds to Ordering Paragraphs 1.c.ii., 1.c.iii., 1.d., 1.i.i., 1.i.iii.,
10 and 1.j. of the Commission's Order.

11 Yes, the North Carolina Utilities Commission should follow the example of
12 the Virginia State Corporation Commission ("SCC"), the agency responsible for
13 regulating Virginia's public utilities, including Dominion Energy Virginia
14 ("Dominion"). Dominion recently proposed a 2.6 GW offshore wind and
15 transmission project projected to cost \$9.8 billion initially and \$21.5 billion total
16 over the 30-year life of the asset. While the SCC granted Dominion the right to
17 own, build, and operate the proposed project without competitive procurement, it
18 also imposed several conditions for the protection of ratepayers. These conditions
19 included a performance guarantee which would hold Dominion's customers
20 harmless for any shortfall in energy production below the estimated 42% annual
21 net capacity factor, measured on a three-year rolling average. In addition, the SCC
22 imposed reporting requirements for cost overruns. I believe this Commission
23 should consider imposing similar conditions for all resources selected in the
24 Carbon Plan, but particularly for long-lead time resources and any and all other

1 resources for which the Commission does not approve competitive or other
2 third-party procurement as a means of ensuring compliance with least-cost
3 principles.

4 **Q: HOW WILL IMPLEMENTATION OF THE CARBON PLAN AND THE**
5 **RELATED RISING PRICES FOR ENERGY AFFECT BUSINESSES**
6 **CONSIDERING WHETHER TO EXPAND OR LOCATE FACILITIES IN**
7 **NORTH CAROLINA?**

8 A: This response corresponds to Ordering Paragraphs 1.a., 1.a.iii., 1.i.i., and 1.j. of the
9 Commission's Order.

10 Because our plants are highly energy-intensive, whenever Charlotte Pipe
11 has sited new plant locations throughout our 120-year history, electricity prices and
12 the availability of high-quality, reliable power are primary drivers of the decision
13 regarding where to expand or potentially site a new facility. If Charlotte Pipe was
14 to lose the advantage of Duke's historically low-cost, reliable, high-quality power,
15 this would likely preclude us from expanding operations and creating jobs in the
16 DEC or DEP service territories. Many other CIGFUR member companies would
17 likely fall in this same category, if Duke's future electric service is no longer
18 affordable, reliable, and high-quality.

19 If the Carbon Plan results in exorbitant increases in electricity prices,
20 decreased power quality, or decreased reliability, existing industry will likely begin
21 to leave the State, and new industry will likely choose not to locate new facilities
22 or expand existing facilities here. The increasing cost structure will then have to be
23 spread over a dwindling industrial rate base, making North Carolina even less
24 competitive and less inclined to attract new manufacturing, launching a death spiral

1 of economy-killing deindustrialization. Nowhere in Duke’s plan is this very
2 predictable scenario addressed. Instead, Duke’s economic impact analysis is almost
3 exclusively focused on how it will attract new economic development projects
4 through the “Clean-Energy Economy” without addressing its plan to ensure it
5 actually retains existing non-residential customers and the good jobs those
6 non-residential customers provide to citizens and residents of this State.

7 **Q: WHAT IS YOUR OPINION REGARDING DUKE’S PLAN TO PURSUE**
8 **SUBSEQUENT LICENSE RENEWALS FOR ITS EXISTING NUCLEAR**
9 **FLEET?**

10 A: This response corresponds to Ordering Paragraphs 1.e., 1.i., 1.i.i., and 1.i.v. of the
11 Commission’s Order.

12 Charlotte Pipe strongly supports Duke Energy’s efforts to relicense its
13 existing nuclear fleet, which will be necessary to serve base load and without which
14 a Carbon Plan would be impossible to implement from a reliability, cost, and
15 executability perspective. Nuclear is a net-zero energy source and the only proven
16 technology capable of generating electricity that is at once dispatchable, reliable,
17 emissions-free, low-cost, and capable of scaling up to meet growing demand.
18 That said, we believe Duke should be required to report to the Commission, on at
19 least an annual basis, regarding Duke’s relicensing efforts and the expected time
20 frame for obtaining such SLRs as well as updated cost estimates as more
21 information is gathered over time. In addition, Duke should be required—in its
22 2024 biennial Carbon Plan proceeding and thereafter—to explicitly include such
23 costs—and all other “common across all portfolios” costs—in its projected Carbon
24 Plan cost estimates and associated rate impacts.

1 **Q: WHAT IS YOUR OPINION REGARDING A CARBON PLAN THAT**
2 **PROVIDES FOR NEW NATURAL GAS GENERATING PLANTS TO BE**
3 **BUILT?**

4 A: This response corresponds to Ordering Paragraphs 1.c. and 1.j. of the
5 Commission's Order.

6 Renewable energy resources are variable resources, and the grid cannot
7 operate without sufficient reliable, dispatchable back-up power. Charlotte Pipe and
8 many other CIGFUR member companies support natural gas and believe it will
9 play a critical role as a bridge fuel to facilitate the energy transition in a way that
10 does not compromise existing reliability. In the event new natural gas is selected as
11 a Carbon Plan resource, however, the same cost mitigation tools I previously
12 recommended should likewise apply to any new natural gas plants. In addition,
13 Duke should be required to evaluate whether retrofitting existing coal plants to burn
14 natural gas—particularly given the transmission infrastructure already in place in
15 those locations—could be a possible least-cost alternative compared to building a
16 new natural gas plant.

17 **Q: DO YOU HAVE ANY OTHER FEEDBACK TO SHARE ON THE**
18 **PROPOSED CARBON PLAN AT THIS TIME?**

19 A: This response corresponds to Ordering Paragraphs 1.b., 1.d., 1.i.i., and 1.i.iii. of the
20 Commission's Order.

21 In fairness, I believe that the Carbon Plan proposed by Duke Energy
22 represents an earnest effort by Duke, particularly given the short time frame within
23 which Duke had to conduct modeling and file its proposal with the Commission.

24 We appreciate that Duke flagged certain unknown variables as well as the

1 numerous other unknowns flagged by the Public Staff, CIGFUR, and various other
2 intervenors, as these are extremely complex technical and economic issues that
3 require more rigorous study. For the sake of all ratepayers, we believe the
4 Commission should not race to put their stamp on a particular portfolio. Rather,
5 Duke, the Commission, and intervenors should be given adequate time—another
6 two years at a minimum—to obtain and evaluate substantial additional information
7 to enable the Commission to decide the “least cost, most reliable” approach. Along
8 these same lines, CIGFUR believes that in the instant proceeding the Commission
9 need only approve near-term activities to occur between now and the first
10 Carbon Plan biennial review process in 2024. Because there are so many unknown
11 variables that could have a material impact on policy objectives like reliability,
12 costs, ratepayer impacts, and executability, I encourage the Commission to remain
13 flexible and open to multiple portfolios at this time.

14 Moreover, CIGFUR encourages the Commission to utilize the general and
15 specific discretion it was delegated through the passage of HB 951, especially
16 pertaining to the time frame for compliance with the carbon emissions reduction
17 goals set forth in the legislation. Compliance in years later than 2030 allows for
18 costs to be spread out over a longer period of time, thus helping to make the
19 year-over-year rate impacts for ratepayers more manageable and ensuring that the
20 least-cost plan is selected. In addition, it enables North Carolina to be flexible and
21 in a position to adapt to new information or technology advancements or any
22 number of other changed circumstances that could warrant altering the path forward
23 in the future. For these reasons, CIGFUR supports the “check and adjust” strategy
24 recommended by Duke Energy. Finally, I note that all portfolios follow a similar

1 trajectory to achieve net-zero emissions by 2050. For these reasons, the
2 Commission should not feel pressured to abide an aspirational interim compliance
3 goal of 2030.

4 **Q: DOES THIS CONCLUDE YOUR TESTIMONY?**

5 **A:** Yes, it does.

BRADFORD D. MULLER

**Vice President, Corporate Communications
Charlotte Pipe and Foundry Company**



Brad is a marketing and communications strategist with more than thirty years of experience in public and corporate affairs, international and government relations, manufacturing and business marketing, crisis management and media training, and more.

Brad spent nearly a decade in Washington, DC, including stints with the U.S. State Department and Edelman Worldwide, the largest public relations and public affairs agency in the world.

Currently, Brad leads government affairs, marketing and corporate communications for Charlotte Pipe and Foundry Company, a fifth-generation, family-owned manufacturer based in North Carolina. Founded in 1901, Charlotte Pipe and Foundry is the leading U.S. producer of cast iron and plastic pipe and fittings for plumbing systems.

Brad worked for the U.S. State Department's Agency for International Development (A.I.D.) in the George H.W. Bush Administration as a desk officer, managing foreign aid programs for Afghanistan and later for Bulgaria and Albania after the 1989 fall of the Berlin Wall.

At Edelman, Brad worked for the late Michael Deaver, former Deputy Chief of Staff to President Ronald Reagan, on a variety of public affairs and international relations issues, including the passage of the North American Free Trade Act (NAFTA).

Brad is very active within the metalcasting industry and his local community, including:

- Leadership roles over the last decade with the American Foundry Society, including incoming president of AFS in 2023, the Cast Iron Soil Pipe Institute and the Municipal Casting Association.
- Providing written and verbal testimony as an industry representative and subject matter expert on manufacturing and regulatory matters before two U.S. House of Representatives subcommittees and the Small Business Administration.
- Advisor to the U.S. Department of Commerce Industry Trade Advisory Committee on Steel and Iron (ITAC) since 2014.
- Member of the U.S. Chamber of Commerce Labor Relations Committee since 2008.
- Served on boards of the YMCA of Greater Charlotte, the Charlotte Chamber of Commerce, the North Carolina Chamber, the John Locke Foundation, and the Charlotte Mecklenburg Police Foundation (former board chair).

PROFESSIONAL EXPERIENCE

CHARLOTTE PIPE AND FOUNDRY COMPANY – CHARLOTTE, NC

Vice President of Corporate Communications, 2002 – Present

- Senior management with fiduciary responsibility as an Officer of the company
- Corporate spokesperson and media contact
- Active role in various industry trade associations
- Leads the company's Government Affairs practice
- Responsible for marketing and branding strategic planning and execution

PRICE / MCNABB – CHARLOTTE, NC

Senior Account Executive, 1995 – 2002

- Managed corporate branding, advertising and public relations programs for numerous clients, including Square D Company and its French parent, Schneider Electric.

EDELMAN WORLDWIDE – WASHINGTON, D.C.

Account Supervisor, 1993 - 1995

- Developed and executed strategic communications, media relations and public affairs programs for a variety of clients, including the Portuguese Trade Commission; the Embassy of India; the city of St. Petersburg, Russia; and Bank of Boston's Global Initiative.

U.S. STATE DEPARTMENT, AGENCY FOR INTERNATIONAL DEVELOPMENT – WASHINGTON, D.C.

A.I.D. Desk Officer and Special Assistant, 1989 - 1993

Special Assistant to the Assistant Administrator for Europe, April 1991 – January 1992

- Responsible for a range of operational, advisory, and supervisory activities for the Assistant Administrator for the Bureau for Europe. Supervised Executive Secretariat operations and personnel.

Desk Officer, Bureau for Europe, March 1990 – April 1991 / January 1992 – February 1993

- Directed and supervised \$90 million assistance program for Albania, a \$34 million aid package for Bulgaria and an annual \$20 million U.S. contribution to the International Fund for Ireland.
- Primary liaison for communicating A.I.D. policy and program details to U.S. Embassy staff overseas and host country officials in Washington. Traveled extensively overseas to supervise aid programs in-country.

Temporary A.I.D. Representative to Albania, January 1992

- Monitored economic and humanitarian assistance in-country for the U.S. Ambassador, including delivery and distribution of critical U.S. food shipments via Greece.

Project Officer, Afghanistan Task Force, May 1989 – March 1990

- Working in Washington and in Pakistan, collected and analyzed data concerning UN and other donor activities related to refugee assistance programs.

PRESIDENTIAL TRANSITION TEAM / WHITE HOUSE STAFF – WASHINGTON, D.C.

- Office of Presidential Personnel, November 1988 – May 1989

BUSH / QUAYLE '88 PRESIDENTIAL CAMPAIGN – WASHINGTON, D.C.

- Scheduling Office, July – November, 1988

EDUCATION

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